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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,992	10/26/2000	Hiroshi Takahashi	198978US2	4046
22850	7590	05/03/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			ROGERS, SCOTT A	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/695,992	Applicant(s) TAKAHASHI ET AL.	
	Examiner Scott A. Rogers	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) 28-32,34-36,38-42 and 44-73 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27,33,37 and 43 is/are allowed.
- 6) ☐ Claim(s) 1,8 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 2-7,9-16 and 21-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/26/00 & 3/27/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 28-32, 34-36, 38-42, 44-73 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 08 November 2004.

Applicant's election with traverse of Species A corresponding to claims 27, 33, 37, and 43 with claims 1-26 being generic in the reply filed on 08 November 2004 is acknowledged. The traversal is on the ground(s) that no serious burden or additional effort is required in searching the entire application because separate classifications for the indicated species was not indicated, electronic searching may be performed for a large number of subclasses, and the prior art searched often contains descriptions of multiple species. This is not found persuasive because: 1) There is no requirement to show separate classification is a Restriction Requirement; 2) Irrespective of whether or not separate subclasses exist for each species, separate searches must never the less be performed; 3) Electronic and classification searches required for each species may overlap but a single search or multiple searches for the details of all species compared to that for a single species performed in the same period of time either simultaneously or sequentially would be a serious burdened; and 4) The fact that many references contain descriptions of multiple species does not reduce, and in fact increases the burden of finding the particular species under examination, while the likelihood of finding

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multiple species of the type presented by applicant in a single reference is questionable and would only partially reduce the burden of search.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 , 8, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tabata et al (JP 11-252364).

Referring to claims 1 and 8:

Tabata et al disclose method and apparatus for quantizing multi-tone image data by an error diffusion method, detecting a change of the image data, and generating a quantization threshold for the error diffusion process, the threshold oscillating cyclically in an oscillation range controlled according to the detection result (see English abstract).

A translation of the Tabata et al reference was not available at the time of examination, but will be obtained within 10 days from the mailing date of this action.

Applicant may contact the Examiner for a copy of this translation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al as applied to claim 8 above, and further in view of Eschbach (EP 0 606 132 A2).

Referring to claims 17-19:

Tabata et al do not disclose, being directed only to a processor, at least based on the English abstract, a part for inputting multi-tone image data by scanning an original image and a part for forming an image according to quantized image data being quantized by the error diffusion part.

However, such parts for input and formation of images are very well known in the prior art as are evidenced for example by Eschbach (see discussion of Figures 2-3).

It would have been obvious to one of ordinary skill in the art to have provided the parts missing in Tabata et al, as found in Eschbach, in order to quantize gray level pixels using an error diffusion method in which the printability of the output on xerographic engines is increased, while edges within the image are enhanced.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al as applied to claim 8 above, and further in view of well known prior art.

Referring to claim 20:

Tabata et al do not disclose a computer readable recording medium in which a program is recorded, the program being read therefrom and executed by a computer so as to cause said computer to perform the functions recited in claim 8.

However, the Examiner takes Official Notice that a computer readable recording medium in which a program is recorded, the program being read therefrom and executed by a computer so as to cause said computer to perform a wide variety functions such as many different methods of processing image data, is very well known in the prior art.

It would have been obvious to one of ordinary skill in the art to have provided a computer readable recording medium in which a program is recorded, the program being read therefrom and executed by a computer so as to cause said computer to perform the functions taught by Tabata et al which claim 16 reads on. Such a computer readable recording medium would allow the method of quantizing multi-tone image data by the error diffusion method taught by Tabata et al to be performed more easily and more flexibly, and at a lower cost, on computers and other image processing and/or image reproduction devices having a computer.

Allowable Subject Matter

Claims 2-7, 9-16, and 21-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 27, 33, 37, and 43 are allowed.

The following is an examiner's statement of reasons for allowance:

Referring to claims 2-7, 9-16, and 21-26, the prior art searched and of record neither anticipates nor suggests in the claimed combinations, detecting edge degree, detecting cyclicity of change, or the central value and maximum range relative to oscillation of the quantization threshold.

Referring to claims 27, 33, 37, and 43, the prior art searched and of record neither anticipates nor suggests in the claimed combinations, generating the quantization threshold using a dither threshold matrix for forming halftone spots at an image space frequency in a range of 100 cycles per inch through 250 cycles per inch.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mura (JP 63-234772) discloses a binarization method by error diffusion where the range of error is restricted and the binarization threshold is varied.

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Miyake et al (JP 2-253484) discloses setting the binarization threshold value based on the difference between mean density values of shadow and highlight image portions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Rogers whose telephone number is 571-272-7467. The examiner can normally be reached on Monday & Wednesday 6:00am-6:00pm and Tuesday & Thursday 6:00am-2:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached at 571-272-7471.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC2600 Customer Service at 571-272-2600. Official correspondence by facsimile should be sent to 703-872-9306. The USPTO contact Center phone numbers are 800-PTO-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SCOTT ROGERS
PRIMARY EXAMINER

01 May 2005